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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/001,759	10/24/2001	Makoto Takemoto	34109	4361
116	7590	05/09/2005	EXAMINER	
PEARNE & GORDON LLP 1801 EAST 9TH STREET SUITE 1200 CLEVELAND, OH 44114-3108			SHARMA, SUJATHA R	
			ART UNIT	PAPER NUMBER
			2684	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/001,759

Applicant(s)

TAKEMOTO ET AL.

Examiner

Sujatha Sharma

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shibuya [JP 11-355160] in view of Ko [EP 905 914 A2].

Regarding claim 1, Shibuya discloses a method and system to perform simple amplification and retransmission at a relay broadcasting system. Shibuya further discloses a relay apparatus equipped with a function capable canceling loop operation of a signal between a reception antenna and a transmission antenna, comprising:

- a subtracting unit for subtracting a duplicated loop signal from a received input signal which includes loop waves in a desirable wave received via said reception antenna; see page 11, paragraph 10
- a relay broadcasting unit for inputting the output signal of said subtracting unit and for outputting a broadcasting signal; see page 2, paragraph 11

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- a signal processing unit for producing said duplicated loop signal based upon any one of the input signal of said relay broadcasting unit and the broadcasting signal outputted from said relay broadcasting unit; see paragraphs 35 and 37.

However Shibuya does not disclose a

- a variable attenuating unit for varying a signal level of said duplicated loop signal which is produced by said signal processing unit,
- wherein said variable attenuating unit adjusts the signal level of said duplicated loop signal so that an amplitude error of said duplicated loop signal is corrected.

Ko, in the same field of endeavor, teaches a repeating system with a variable attenuator, which adjusts the level of the transmission signal in accord with the input signal. See fig. 5, paragraphs 26-33,46.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teachings of Ko to Shibuya to prevent the degradation of the transmit signal.

Regarding claim 2, Shibuya discloses a method and system to perform simple amplification and retransmission at a relay broadcasting system. Shibuya further discloses a relay apparatus equipped with a function capable canceling loop operation of a signal between a reception antenna and a transmission antenna, comprising:

- a subtracting unit for subtracting a duplicated loop signal from a received input signal which includes loop waves in a desirable wave received via said reception antenna; see page 11, paragraph 10

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- a relay broadcasting unit for inputting the output signal of said subtracting unit and for outputting a broadcasting signal; see page 2, paragraph 11
- a signal processing unit for producing said duplicated loop signal based upon any one of the input signal of said relay broadcasting unit and the broadcasting signal outputted from said relay broadcasting unit; see paragraphs 35 and 37.

However Shibuya does not disclose a

- a variable phase shifting unit for varying a phase of said duplicated loop signal which is produced by said signal processing unit,
- wherein said variable phase shifting unit adjusts the signal level of said duplicated loop signal so that a phase error of said duplicated loop signal is corrected.

Yoshihiro, in the same field of endeavor, teaches a relay apparatus with a variable phase shifter, which adjusts the phase of the transmission signal in accord with the input signal. See abstract.

Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to provide the above teachings of Yoshihiro to Shibuya to prevent the degradation of the transmit signal.

Allowable Subject Matter

3. Claims 3-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3-7 disclose the following unique features where the relay apparatus further includes

- a dividing unit for dividing the local oscillation frequency signal,

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- a first frequency converting unit for converting the output signal of said relay broadcasting unit into an intermediate frequency signals by using one of said oscillation frequency signals divided by the dividing unit and
- second frequency converting unit for frequency converting said duplicated loop signal which is produced by signal processing unit into a wireless frequency signal by using the other oscillation frequency signal divided by the said divider unit
- a signal level measuring unit for measuring a signal level of the output of said subtracting unit and
- error rate measuring unit for measuring an error rate of said broadcasting signal, which is demodulated, by said receiving/demodulating unit.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Talwar [US 4,952,193]	Interference canceling system and method
Ghose [US 3,699,444]	Interference Cancellation system
Waltho [US 2005/0069063]	Broadband interference cancellation
Saad [US 5,396,655]	Adaptive canceller for contiguous band filtering
Roll [US 3,916,320]	Loran receiver signal canceller

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sujatha Sharma whose telephone number is 571-272-7886. The examiner can normally be reached on Mon-Fri 7.30am - 4.00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sujatha Sharma
April 28, 2005


NAY MAUNG
SUPERVISORY PATENT EXAMINER